State of New Mexico
Energy, Minerals and Natural Resources Department

Bedrock

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

PIT REMEDIATION AND CLOSURE REPORT

Operator: Questar Telephone: (801) 584-6361

Address: P.O. Box 58900, Salt Lake City, Utah 84158-0900

WellName: Federal A #2E (34750)

Location: Unit or Qtr/Qtr ~~See~~ NE/NW Sec 26 T 30N R 13W County San Juan

PitType Dehydrator

LandType: BLM

Pit Location: Pit dimensions: length 12 ft., width 12 ft., depth 4 ft.
(Attach diagram)

Reference: Wellhead

Footage from reference: 116 ft.

Direction from reference: 10 Degrees East of North

Depth To Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 points)	0
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes (20 points) No (0 points)	0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet (20 points) 200 feet to 1,000 feet (10 points) Greater than 1,000 feet (0 points)	0
	Ranking Score (TOTAL POINTS):	0

Form A

(34750)

Date Remediation Started: 11/21/00 Date Completed: 11/21/00

Remediation Method: (check all appropriate sections)
Excavation ☑ Approx. Cubic Yard 22
Landfarmed ☑ Insitu Bioremediation ☑
Other Landfarmed soil after mechanical aeration.

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility)
Onsite ☑ Offsite

General Description Of Remedial Action:

The pit was excavated to remove gross petroleum contamination. Encountered BEDROCK at 4'. The excavated material was mechanically aerated and placed into an onsite landfarm.

Ground Water Encountered: 0

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location FEDERAL A#2E-V-EXFL-01

Two samples were collected, one sample from the excavation bottom and the second sample was made up of 4 points from each excavation wall.

Sample depth 4'

Sample date 11/21/00 Sample time 12:13

Sample Result

Benzene (ppm) 22.0

Total BTEX (ppm) 265.01

Field Headspace (ppm)

TPH (ppm) 1260

Ground Water Sample: 0

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 12-20-01

SIGNATURE [signature]

PRINTED NAME AND TITLE Mark Harvey for Williams Field Services Project Coordina

Form B

PIT RETIREMENT FORM

34750

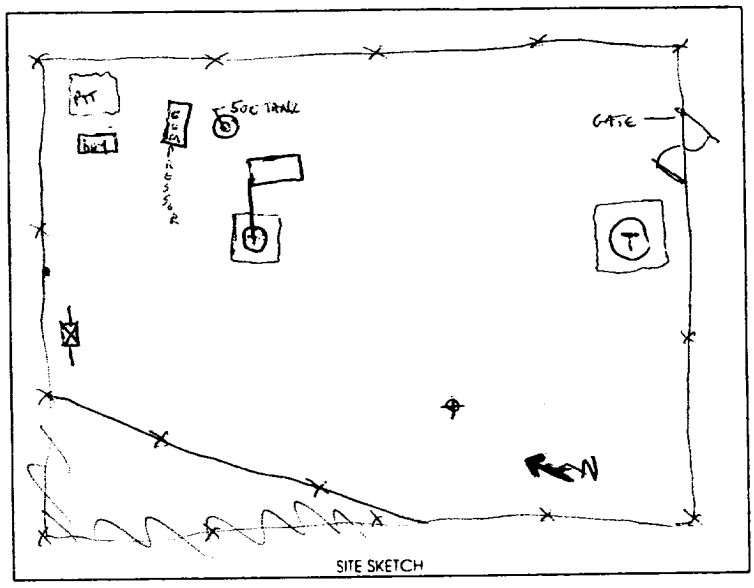
Date: 11-21-00 Weather SUNNY ~ 42°

Well Name FEDERAL [redacted] A #2E Operator QUESTAR Sec 26 T 30N R 13W UL NE/NW

Land Type: BLM STATE FEE INDIAN County SAN JUAN

One Call Made (505-765-1234)? (Y) N

Line Marking Evident? (Y) N



SITE SKETCH

Pit Location:

Reference Wellhead X Other ____

Distance from: 116'

Direction: 10 Degrees X E N X of ____ W S ____

Starting Pit Dimensions 12 x 12 x 1

Final Pit Dimensions 12 x 12 x 4

Organic Vapor Readings: Start ____ @ 2' ____ @ 4' ____ @ 6' ____ @ 8' ____ @ ____ @ ____

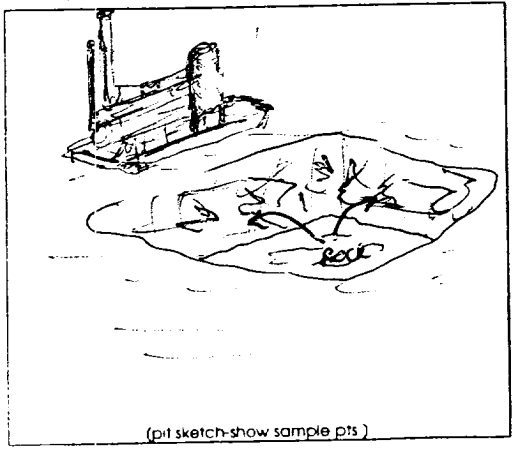
Soil Description: SILTY SAND
SAND + SS FRAGMENTS
SANDSTONE - BEDROCK

Well Proximity To: Residence, Domestic Water Well, Stock Well NEW HOMES WITHIN ~ 300 - 400 YDS
Arroyo, Wash, Lake, Stream GLADE WASH ~ 3/4 MILES NORTH (>50' VERTICALLY)
Estimated or Known Distance to Ground Water >100'

Source of Backfill (if other than processed material ____

Samples collected: Type Progress: Verification: ID ____ soil / water
Progress: Verification: ID ____ soil / water
Progress: Verification: ID ____ soil / water

Sample sent to Lab Via: Courier Hand Carried Other ____ Preservative: ICE Other ____



(pit sketch-show sample pts)

Comments: LOCATION IS ENTIRELY FENCED — WAIT ON TECH TO UNLOCK MAIN GATE — PIT IS IN NE CORNER + HOE CANNOT SET UP AS NORMAL — PULL FENCE + SET UP ON SW CORNER OF PIT — PULL ON CONTAMINATED SOIL + SAND — ROCKY MATERIAL @ 2' — BEDROCK FLOOR + SIDEWALL @ 4' — SOME STAINING IN SANDSTONE FRACTURES IN SIDEWALL — SAMPLE + LF —

Soil Shipped to: ____

Prepared by: M. [redacted]

Environmental Services
187 CR 4980
Bloomfield, NM 87413

Pit Closure and Retirement Addendum- Risk Assessment

The sample analyzed for confirmation at the **NM Federal A #2E** exhibited slightly elevated levels of total petroleum hydrocarbons (TPH) and / or BTEX. Toxicity information indicates that such low levels pose little risk to human health and the environment. This conclusion is based in part on the information below:

Toxicity Information

Toxicity values for TPH have not been established due to the variability of the chemical makeup of TPH. Normally, the toxicity is based on the toxicity of particular constituents of concern that may be present and which are evaluated based on health-based standards. The most common constituents examined include benzene, ethylbenzene, toluene, and xylene.

In the absence of constituents of concern or when the concentrations of the constituents of concern are low, the acceptable level of TPH is established by considering the following:

- No liquid product should remain in the soil
- The TPH should not harm vegetation
- The TPH concentrations should not create an odor nuisance
- Hydrocarbon vapors which may emanate from the impacted soil should not generate harmful or explosive vapors
- Site monitoring should indicate that TPH levels are stable or declining

Environmental and Site Conditions

Based on an evaluation of topography, this site is believed to have ground water greater than 100' below ground surface. Due to the immobility of these types of contaminants through soil and a lack of continuous transporting mechanisms, it is very likely that the residual contamination in the pit will degrade in the short term under existing conditions, or certainly during the life of the producing well. Observations and data collected from other sites suggests that contaminant concentrations would diminish vertically and likely be less than 10 ppm within the next 4 - 10 feet of *soil* depth. Notwithstanding, bedrock was discovered at 3 1/2' on the pit bottom. This condition retards vertical migration of contaminants and serves to significantly limit potential groundwater impact.

While residual TPH and/or BTEX may exist at this site, closure of this site is warranted for the following reasons:

1. The majority of soils which exhibited high levels of TPH and BTEX have been removed.
2. Residual TPH concentrations are below levels considered problematic based on the criteria above.
3. Discharge has been eliminated and a steel tank installed to prevent any future release to soils.
4. Depth to groundwater is estimated at greater than 100'.
5. Vertical migration of contamination is limited due to bedrock and/or the low vertical hydraulic conductivity of underlying soils.
6. TPH / BTEX concentrations will not increase and will likely degrade over time from natural processes occurring in-situ.
7. Further excavation at the site is impractical due to bedrock.

Since there are no nearby receptors or domestic water sources, this site poses little risk to human health and the environment. Closure is justified based on the relatively low total petroleum hydrocarbon (TPH) concentration and the fact that all closure criteria cannot be practically attained. Additional information may be found in the Technical Background Document titled: *Risk Based Closure of Unlined Surface Impoundment Sites, San Juan Basin, New Mexico.*

QWAL LABORATORIES, INC.

2911 ROTARY TERRACE, P.O. BOX 562/PITTSBURG, KS 66762/(316)232-1970

LABORATORY REPORT: **REFERENCE #: 0011655**

SENT TO: *WILLIAMS GAS PIPELINE*
187 COUNTY ROAD # 4980
BLOOMFIELD, NM 87413
MARK HARVEY
PROJECT: TAA PITS

DATE REPORTED: 12/05/00
DATE COLLECTED: 11/21/00
DATE RECEIVED: 11/28/00

Reference Fraction:0011655-06A
Sample ID: FEDERAL A#2E-V-EXFL-01 34750
Sample Matrix: SOIL
Sample Date Collected: 11/21/0012:13:00

TEST	METHOD	RESULT	UNITS	PQL	ANALYZED	BY
TPH-DRO	SW846-8015D	1260	MG/KG	2.0	11/30/00	BEM
BTEX	OA1/8021B			3.0		
BENZENE		22.0	MG/KG	0.20	11/29/00	MB
TOLUENE		66.7	MG/KG	0.20	11/29/00	MB
ETHYLBENZENE		9.31	MG/KG	0.20	11/29/00	MB
TOTAL XYLENES		167	MG/KG	0.20	11/29/00	MB
BFB (SURROGATE)		90	125	75		

ND=NONE DETECTED
PQL=PRACTICAL QUANTITAION LIMIT
SU=STANDARD UNITS
B=DETECTED IN METHOD BLANK

APPROVED BY: _____
TERRY KOESTER
LABORATORY DIRECTOR

QWAL LABORATORIES, INC.

2911 ROTARY TERRACE, P.O. BOX 562/PITTSBURG, KS 66762/(316)232-1970

LABORATORY REPORT: **REFERENCE #:** 0011655

SENT TO: *WILLIAMS GAS PIPELINE*
187 COUNTY ROAD # 4980
BLOOMFIELD, NM 87413
MARK HARVEY
PROJECT: TAA PITS

DATE REPORTED: 12/05/00
DATE COLLECTED: 11/21/00
DATE RECEIVED: 11/28/00

Reference Fraction:0011655-05A
Sample ID: FEDERAL A#2E-V-EXWA-01 34750
Sample Date Collected: 11/21/0012:10:00
Sample Matrix: SOIL

TEST	METHOD	RESULT	UNITS	PQL	ANALYZED	BY
TPH-DRO	SW846-8015D	604	MG/KG	2.0	11/30/00	BEM
BTEX	OA1/8021B			3.0		
BENZENE		4.42	MG/KG	0.50	11/29/00	MB
TOLUENE		9.44	MG/KG	0.50	11/29/00	MB
ETHYLBENZENE		2.96	MG/KG	0.50	11/29/00	MB
TOTAL XYLENES		59.6	MG/KG	0.50	11/29/00	MB
BFB (SURROGATE)		122	125	75		

ND=NONE DETECTED
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B=DETECTED IN METHOD BLANK

APPROVED BY: _____
TERRY KOESTER
LABORATORY DIRECTOR

QWAL LABORATORIES, INC.

2911 ROTARY TERRACE, P.O. BOX 562/PITTSBURG, KS 66762/(316)232-1970

LABORATORY REPORT: **REFERENCE #:** 0012429

CLIENT TO: ***WILLIAMS GAS PIPELINE***
187 COUNTY ROAD # 4980
BLOOMFIELD, NM 87413
JIM STRUHS

DATE REPORTED: 12/21/00
DATE COLLECTED: **12/15/00**
DATE RECEIVED: **12/16/00**

PROJECT: TAA PITS/EL CEDRO WW

Reference Fraction:0012429-04A
Sample ID: FEDERAL A2E-LF-V-01
Sample Date Collected: **12/15/0008:51:00**

Sample Matrix: SOIL

TEST	METHOD	RESULT	UNITS	PQL	ANALYZED	BY
TPH-DRO	SW846-8015D	219	MG/KG	2.0	12/20/00	BEM
BTEX	OA1/8021B			3.0		
BENZENE		ND	MG/KG	0.050	12/18/00	KKL
TOLUENE		62.0 D	MG/KG	0.050	12/18/00	KKL
ETHYLBENZENE		ND	MG/KG	0.050	12/18/00	KKL
TOTAL XYLENES		29 D	MG/KG	0.050	12/18/00	KKL
BFB (SURROGATE)		113	125	75		

ND=NONE DETECTED
PQL=PRACTICAL QUANTITAION LIMIT
SU=STANDARD UNITS
B=DETECTED IN METHOD BLANK

APPROVED BY:

TERRY KOESTER
LABORATORY DIRECTOR